

Application of the Information Motivation Behavioral Skills Model to HIV and HCV risk and needle sharing behaviors among persons who inject drugs.

William T. Robinson, Ph.D. ^{1,2}

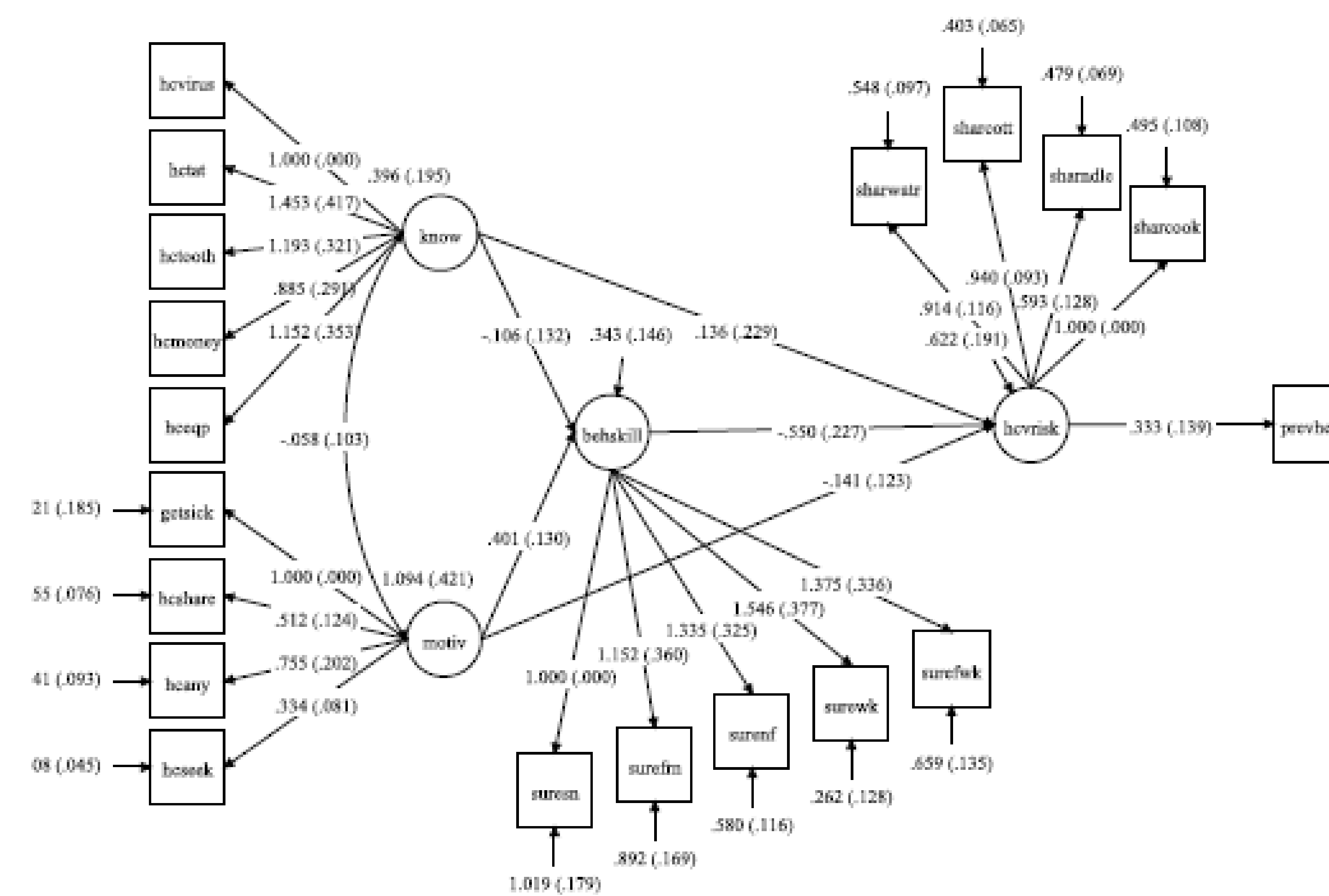
1) Louisiana Office of Public Health STD/HIV Program.

2) Louisiana State University Health Sciences Center School of Public Health

The current study adapts the Information-Motivation-Behavior (IMB) model of health behavior to injection drug using risk behaviors. Briefly, this model postulates that prevention behaviors are directly influenced by an individual's knowledge about a disease, their motivation to avoid the disease and their skills and capacity to engage in prevention behaviors. Additionally, information and motivation themselves directly impact behavioral skills. The current study applies this model to HIV and Hepatitis prevention knowledge, motivation and skills and assesses their direct and indirect effect on needle sharing and sexual risk behavior in two samples of persons who inject drugs and heterosexuals living at high risk for HIV.

Methodology

Scales for measurement of IV and HCV information, motivation and behavioral skills (self-efficacy) were developed and included in the New Orleans arm of the National HIV Behavioral Surveillance of Injection Drug Users (NHBS-IDU). Five hundred and four current injection drug users were surveyed and provided a free linked HIV test during late 2012. All participants were recruited using respondent-driven sampling methods. A path analytic model, which describes the direct effects of information and motivation on needle sharing as well as their indirect effects through behavioral skills, was tested using AMOS Structural Equation Modeling software.



Results

For a subsample of 118 NHBS-IDU participants results show acceptable model fit given a small sample size. While participants had high levels of information and knowledge about HIV and HCV, information itself was not found to relate to either behavioral skills or needle sharing behaviors. Higher levels of skills ($\beta=-.550$) and motivation ($\beta=-.141$) were directly related to lower levels of needle sharing. Additionally, motivation had an indirect effect on needle sharing that was mediated through skills. The cumulative total effect of motivation alone and motivation through skill improvement accounted for a full 13% of the variance in needle sharing behaviors.

Discussion

Many traditional approaches to HIV and HCV prevention focus on increasing awareness and information about HIV and risk behaviors. This model, however, appears to indicate that increasing awareness may not be as effective as interventions or programs that increase motivation or motivation coupled with skills building. While some HIV/STD prevention interventions, such as motivational interviews and project RESPECT do attempt to capitalize on this relationship, more efforts should be made to incorporate this important link into high impact prevention programs.

Table 1. Questionnaire Item Means, Standard Deviations, and Ranges

Questionnaire item	Variable label	Mean	Std dev	Range
Information				
HCV is a virus transmitted by blood.	HCVIRUS	0.83	0.381	0-1
People <u>cannot</u> get Hepatitis C from an infected person by sharing needles used for tattoos or body piercing.	HCTAT	0.84	0.373	0-1
People <u>cannot</u> get Hepatitis C from an infected person by sharing toothbrushes or razors	HCTOOTH	0.73	0.449	0-1
It is possible to get Hepatitis C from an infected person by sharing straws or rolled money used to snort drugs.	HCMONEY	0.39	0.489	0-1
Injection drug users who share injecting equipment are at greater risk of getting HIV/AIDS and Hepatitis C.	HCEQP	0.94	0.246	0-1
Motivation				
I would rather get sick than share my needles or my works.	GETSICK	1.55	1.316	0-4
If I knew I had Hepatitis C, I would not share my needles or my works with others.	HCSHARE	0.95	0.865	0-4
I would never share needles or works with anyone who had Hepatitis C	HCANY	1.03	1.084	0-4
If I found out I was infected with Hepatitis C, I would seek treatment.	HCSEEK	0.68	0.731	0-4
Behavioral Skills ("How sure are you that you would be able to...")				
Use a new sterile needle every time you inject?	SURESN	1.11	1.25	0-4
Refuse to let a friend use a needle you had already used to inject drugs?	SUREFRN	1.15	1.268	0-4
Refuse to use a needle that had already been used by a friend to inject drugs?	SURENF	0.98	1.24	0-4
Use a new cooker, cotton, and water each time you inject drugs?	SUREWK	1.25	1.241	0-4
Refuse to let a friend use a cooker, cotton, or water you had already used to prepare drugs?	SUREFWK	1.44	1.294	0-4
Injection Risk				
Used needle after someone else - 12 months	SHARCOOK	1.23	1.183	0-4
Shared a cotton - how often	SHARNDLE	0.66	0.895	0-4
Shared water - how often	SHARCOTT	0.96	1.097	0-4
Shared a cooker - how often	SHARWATR	0.86	1.142	0-4

Table 2. Item Intercorrelations for all manifest variables

	HCVIRUS	HCTAT	HCTOOTH	HCMONEY	HCEQP	GETSICK	HCSHARE	HCANY	HCSEEK	SURESN	SUREFRN	SURENF	SUREWK	SUREFWK	SHARNDLE	SHARCOTT	R	SHARCOOK	hepcatpre
HCVIRUS																			
HCTAT	0.317																		
HCTOOTH	0.258	0.445																	
HCMONEY	0.264	0.2	0.277																
HCEQP	0.077	0.387	0.174	0.207															
GETSICK	0.156	0.093	0.165	0.013	0.082														
HCSHARE	0.004	-0.052	-0.009	0.02	-0.057	0.356													
HCANY	0.012	-0.057	0.054	0.015	0.007	0.379	0.515												
HCSEEK	0.096	0.109	0.123	-0.065	0.039	0.32	0.474	0.432											
SURESN	0.099	0.178	0.038	0.036	0.144	0.34	0.399	0.23	0.15										
SUREFRN	-0.004	0.052	0.039	0.072	0.179	0.29	0.234	0.24	0.405										
SURENF	0.052	0.033	0.107	0.073	0.026	0.443	0.379	0.428	0.228	0.479	0.626								
SUREWK	0.033	0.049	-0.043	-0.113	0.083	0.409	0.33	0.408	0.211	0.502	0.6	0.557							
SUREFWK	0.007	0.075	0.099	-0.007	0.148	0.389	0.233	0.288	0.131	0.376	0.767	0.663	0.727						
SHARNDLE	0.042	0.08	0.042	0.005	-0.016	0.506	0.111	0.229	0.357	0.265	0.37	0.335	0.21	0.21					
SHARCOTT	0.073	0.03	0.055	0.044	0.094	0.361	0.106	0.25	0.008	0.233	0.264	0.231	0.524	0.383	0.44				
SHARWATR	0.029	0.077	0.088	0.013	0.067	0.359	0.059	0.272	0.024	0.199	0.299	0.423	0.342	0.443	0.802				
SHARCOOK	0.028	0.087	-0.002	-0.026	0.146	0.4	0.056	0.248	0.075	0.177	0.286	0.217	0.497	0.429	0.468	0.806	0.674		
hepcatpre	0.096	0.083	0.068	0.026	0.064	0.278	0.129	0.458	0.224	0.086	-0.033	0.026	0.126	-0.048	0.123	0.156	0.088	0.159	
hepcatnew	0.137	0.07	0.172	-0.014	0.005	0.021	0.034	-0.072	0.035	0.008	0.021	0.14	0.099	0.186	0.042	0.096	0.149	0.097	-0.37